Amendments to the Specification:

Please replace paragraph [0033] with the following amended paragraph:

One method of determining solution gas-water ratio for the formation water is to obtain a bottom-hole sample of undersaturated formation water and determine the solution gas-water ratio and perhaps bubble-point in a laboratory. For the purposes of this invention, a general objective of collecting a bottom-hole sample would be to obtain a representative sample of formation water as a single liquid phase, but containing gas in solution at or near the existing reservoir pressure and temperature. Standards have been written for obtaining bottom-hole samples of undersaturated oil. The goal here is to capture substantially pure formation fluid (that is fluid not tainted or contaminated by drilling fluids or the like) and to assure that the formation water sample obtained is truly representative of that existing naturally in the formation. The methodology employed and described in detail in these standards is directly applicable to the procedure of obtaining a bottom-hole sample of formation water, and thorough treatment and nuances of the methodology can be found in the reference listed as that of American Petroleum Institute, 1966 that would encompass the following abbreviated description. Basically in obtaining an appropriate sample, existing reservoir temperature and pressure may be measured and recorded. In order for the sample to be representative of the formation water, the well should be produced for a period long enough to remove all remnants of foreign fluids introduced during the process of drilling and completion. The pressure should be lowered at the bottom of the hole adjacent to the formation so that reservoir fluids will move from the formation to the wellbore. During this production period, a small drawdown (drawdown is the difference between the reservoir pressure and the bottom-hole producing pressure) is recommended so that the pressure does not drop so low as to go below the bubble point pressure of the formation water during sampling. If the bottom-hole pressure drops below the bubble point pressure of the formation water, two phases may exist when the sample is taken at the bottom of the hole so that capturing the appropriate amount of gas and formation water in the appropriate proportions can become a significant problem. To obtain the sample, the well could continue to be produced at a slow rate or it could be shut-in just prior to sampling depending upon the configuration of the well and sampling equipment. A sampler described in the standards may be lowered in the well to a level typically adjacent to the formation and a sample drawn. The

sample may then be remotely sealed to effect contained sampling at the bottom of the hole at or above reservoir pressure, brought to the surface, and transported to the laboratory for analysis commonly referred to in the petroleum industry as PVT (pressure-volume-temperature) analysis. Solution gas content of the formation water may also be determined in situ by a downhole measuring device.

Please replace paragraph [0052] with the following amended paragraph:

The bubble point pressure of the formation water can also be estimated by a variety of techniques in accordance with the present invention. If a bottom-hole sample was collected and analyzed, and if the solution gas-water ratio as a function of absolute pressure was obtained as part of the analysis, then the bubble-point pressure of the formation water can be determined by finding the inverse of the functional relationship, with the estimate of solution gas-water ratio as previously described. Mathematically, this can be expressed as,

~~$bp = f\text{-}1(Rsw),$~~

$bp = f^{-1}(R_{sw}),$